

**UNIVERSITY OF GONDAR**  
**COLLEGE OF MEDICINE AND HEALTH SCIENCE**  
**DEPARTEMENT OF MIDWIFERY**



**PROPORTION AND ASSOCIATED FACTORS OF UNINTENDED  
PREGNANCY AMONG PREGNANT WOMEN IN DEBREBREHAN,NORTH SHOWA  
ZONE,AMHARA,ETHIOPIA,2014**

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**UNIVERSITY OF GONDAR**  
**COLLEGE OF MEDICINE AND HEALTH SCIENCES**  
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AMHARA, ETHIOPIA, 2014**

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## **Acronyms**

EDHS - Ethiopian Demographic Health Survey

ETB - Ethiopian Birr

FP - Family planning

MDG - Millennium development goals

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## Abstract

**Introduction:** unintended pregnancy is a cause for many maternal and child illness and death. Besides, it's bad complication; it is an obstacle to country development and decrease quality of individual life. According to Ethiopian demographic health survey 2011, 29% of pregnancies in Ethiopia are unintended. Unlike to this, there is no parallel data or known proportion and factors in the study area.

**Objective:** The main objective of this study is to assess the proportion and associated factors of unintended pregnancy in Debrebrehan,north Showa zone,Amhara, Ethiopia in 2014.

**Method:** A community based cross sectional study was conducted in Debrebrehan rural and urban Kebelesfrom July 1-30, 2014.Stratified cluster sampling technique was employed to recruit a total of 697 pregnant mothers. Data was collected by interviewer administered pretested and semi structured questionnaire.SPSS version 20 was used for data analysis andbinary and multiple logistic regression was applied. Odds ratio at the confidence level of 95% and P- value  $\leq 0.05$  were considered as a significant.

**Result:** A total of 690 mothers participatedwith a response rate of 98.99%. Proportion of unintended pregnancy found to be 23.5%.Out of which 12.9% are mistimed and 10.58% are unwanted. Formerly married (AOR 8.42: 4.07, 17.39) and never married (AOR 9.21: 4.27, 19.86), estimated time to walk to the nearest health facility>80minutes (AOR 3.56: 1.69, 7.53),  $\geq 5$  gravidity (AOR 3.88:1.41, 10.69), 1-2 parity (AOR 0.43: 0.21, 0.87) and partner disagreement on desire number of children(AOR4.09: 2.07, 8.08) are factors significantly associated with unintended pregnancy.

**Conclusion and Recommendation:**Proportion of unintended pregnancyin the study area was found to be high.Women who werenever married and formerly married, travel>80 minute to the nearest health facility,  $\geq 5$  gravidity, 1-2 parity and partner disagreement on desire number of child shows a significant association with unintended pregnancy.High effort needed to be worked on this target groups by counseling,health education and providing contraceptive service by collaboratingwith their

partner.**Keywords:**Proportion, unintended pregnancy, associated factors, North Showa Ethiopia.

## **1. Introduction**

### **1.1. Statement of the problem**

Unintended pregnancy defined as pregnancy, which admits either mistimed or unwanted pregnancy(1,2). It is a major global public health problem with bad complication for a mother, a child, a family, a society and for a country as large (1–6). Unintended pregnancy increases socioeconomic and health risks of a society, especially for mother and child(2,3). In addition, it has worse outcome for family economy, population development and achievement of millennium development goal(MDG)(7). Furthermore, studies also revealed the direct relation of unintended pregnancy with poor utilization of maternal health care service and delayed antenatal care follow up, which later leads to increase in maternal illness and mortality by a consequence of unsafe abortion and ill maternity care(8–10). As well unintended pregnancy result in unsafe abortion, which is a main cause of maternal mortality and morbidity. Nearly 80,000 mothers die per year because of unsafe abortion and almost 95% of death happen in developing country(11).

Generally a mother with unintended pregnancy will have low physical and mental health, low self-care, poor health, high level of substance addiction and depression during pregnancy (6,12,13). Besides, all these maternal consequences will create an impact to the fetus, will be delivered by unskilled attendant, delivered as low birth weight, increased rate of hospitalization, poor growth, inadequate immunization and adversely leads to maternal and child death(2,3).

The distribution of unintended pregnancy is wide and spreads all over the world. In 2012 worldwide 80 million mothers had unintended pregnancy with the outcome of 30 million unintended births and 40 million abortions and 10 million miscarriages(14). Whereas in Africa from a total of 49.1 million pregnancies 39% were unintended pregnancy(15). In Ethiopia according to Ethiopian demographic health survey (EDHS), the percentage of

unwanted births decreased (from 2000,17% to 9% in 2011).However the percentage of pregnancy wanted later doesn't show improvement(19-20%)(16).

Many factors influence unintended pregnancy, of those the major ones are young or old age, low maternal education, unmarried marital status, low income, high parity and gravidity, long estimated time needed to walk to the nearest health facility and ever use of family planning (FP) are the major predictors(5,17–21).

In the past solutions have been tried to overcome the problem likehealth education, contraceptive education,contraceptive promotion like promotion of long acting reversible contraceptive and providing post abortion FP service(22–24).Fortunately, the solutions worked well, long acting reversible contraceptive method in 2012 prevents 218 million unintended pregnancy,which admit 55 million unplanned births, 138 million abortions (from which 40 million unsafe) and 25 million miscarriages(14).

Unintended pregnancy problems and complications are vast. However, evidences and literatures on the problem are limited. Thus to minimize and diminishunintended pregnancy further research is needed. Therefore, this paper wasaimed to determine the proportion and associated factors ofunintended pregnancy in Debrebrehan, north showa zone, Amhara, Ethiopia.



## **1.2. Literature review**

Unintended pregnancy is a public health problem which is a cornerstone for many maternal, child and family health problem which progressively affect the country economy. Mostly the terminal point of unintended pregnancy is abortion. Whereas if the pregnancy proceeds, the maternal and child outcome more likely to be negative(2,3,6).

### **1.2.1.Proportion of unintended pregnancy**

Globally unintended pregnancy accounts for around 86 million and end up with unplanned birth,abortion and miscarriage (33 million, 41 million and 11million respectively).Regionally, in more developed regions unintended pregnancy revealed to be 42per 1000 women.Likewise, in less developed regions from 1000 womenunintended pregnancy scores57 andCompleted with unplanned birth, abortion and miscarriage. Unintended pregnancy is 36 percent higher in developing country than developed country.Apart from this in Africa unintended pregnancy exposed to be 39% and fetch up with 21% unplanned birth,13% abortion and 5% miscarriage (15).

Proportion ofunintended pregnancy is different among states and is relatively high among those with a high urban population like New York,New jersey,Maryland,California, Maryland and Delaware(25).Studies inunited stated revealed unintended pregnancy as 49% and almost 43% of them end up with abortion. Parallel to this, 37% of births in the united stateswere to be unplanned (26,27). In Ecuador, Bangladeshand Britain unintended pregnancywere presented as 62.7%,30% and 16.2% respectively(28–30).

Unintended pregnancy also reported in African countries like Tanzania,Kenya and Senegal as 50.7%, 24% and 14.3% respectively(8,19,31).A nationalstudy conducted in Ethiopia disclosedunintended pregnancyas24% meaning, almost one million unintended pregnancy will occur each year. The result also revealed the regional difference of unintended pregnancy in Ethiopia, from the eleven regions, unintended pregnancy is higher in Oromia region(39.8%),low in afar region (1.5%) and 25.9 % in Addis Ababa (5).On the other hand a community basedcross sectional studyconducted in eastern Ethiopia Harar kersa worda reported the proportion of unintended pregnancy as

27.9%(18).Likewise similar study in Hosanna and in Ganji woreda west wollega,unintended pregnancy discovered to be 34% and 36.5% respectively(20,32).In similar manner study in Damot gale woreda district in southern Ethiopia reported as 42.4% (33).A cohort study conducted among pregnant women's in Gilgel giba Jimma zone rural southwest Ethiopia which identifies the relationship between unintended pregnancy with depression also brought out as 41% (34).Similarly in the same area, a cross sectional study carried on women's age 15-49,states as 35%(10).

### **1.2.2.Factors associated with unintended pregnancy**

Unintended pregnancy is multifactorial problem and caused by association of different factors(18,20,29,31,33).From theseunintended pregnancy will be related withone or more of the following factors.

#### **1.2.2.1. Sociodemographic and economic characteristics**

Studies revealed that most mothers with unintended pregnancy are 15-19 or > 40 in age,less educated,unmarried ,poor economic status, rural residence and living area distant from health facility (4,5,18,31). A Survey conducted in Nepal reported,most mothers with unintended pregnancy are older in age greater than 40, while age increase the probability of unintended pregnancy increase(4).Parallel to this a pregnancy surveillance conducted in kersa woreda eastern Ethiopia also discovered, while mother age is 40 and above the proportion of unintended pregnancy got apex(18).Meanwhile, studies in Kenya Nairobi, Senegal and Ethiopia unveiled the relation of younger age with unintended pregnancy,younger women age between 15-19 shows high numberofunintended pregnancy than those age greater than 20 (5,19,31). Likewise, studyconducted in Nairobi, Kenyashows the association of women's employment with unintended pregnancy, women with formal employment status have increasedtheir knowledge of reproductive life,family planning and increase her social communication this lead her to control her fertility(31). Althoughthisliteraturepointed the association of unintended pregnancy with marital status,unintended pregnancyreport is higheramong unmarried women than married ones(19,31).

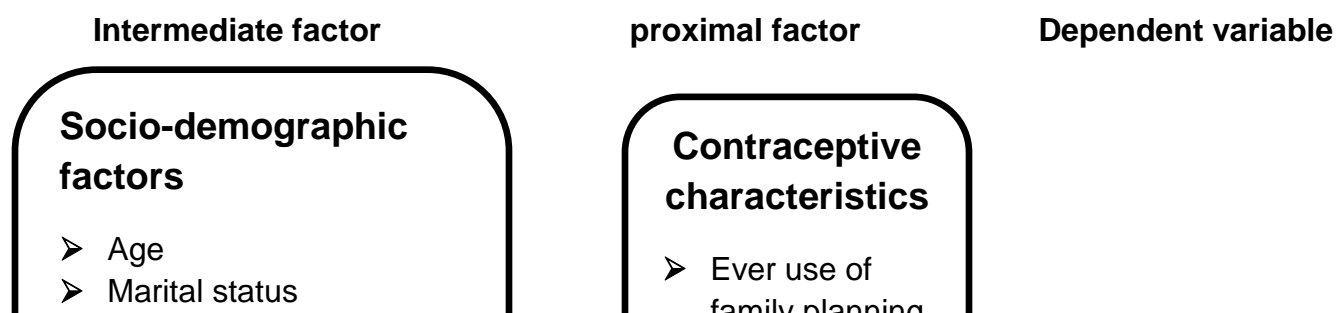
#### **1.2.2.2. Reproductive characteristics**

A survey conducted in six urban sites of Senegal reported the direct relation of unintended pregnancy with Parity and Gravidity. While women's parity and Gravidity increases unintended pregnancy increases (19). Parallel to this a community based study conducted in southern Ethiopia Hosannatown also supports this idea, unintended pregnancy augmented with increase in number of gravidity and parity (20). A community based study conducted in eastern Ethiopia kersa woreda, mothers more than seven and above parity and as well study in Hosanna, parity five and above showed strong association with unintended pregnancy (18,20). Unlike to this, study conducted in Nairobi Kenya reported result opposite to this, showing that zero parity is associated with high number of unintended pregnancy which is contradicting with the above statement (31). On the other hand a cross sectional study conducted among married pregnant women in Ganji woreda, west wollega Oromia region and in Hosanna town confirmed significant association of husband disagreement to limit family size with unintended pregnancy. Women's who disagree with their partner are more likely to have unintended pregnancy (20,32). Study in Ganji woreda also revealed relation of unintended pregnancy with ideal number of children. When a woman desired number of children decrease the risk of unintended pregnancy increases (32).

### 1.2.2.3. Contraceptive Factors

Beside to other factors contraceptive factors play a major role in the occurrence of unintended pregnancy. Study conducted in Senegal approved the direct relation of unintended pregnancy with ever use of FP, unintended pregnancy decrement seen in those women who have ever used FP method than those who never used (19). Likewise a survey carried in Ethiopia also revealed the significant relation of unintended pregnancy with ever use of FP (5).

In the proposed study ethically there is no discovered or reported challenge or harm to mother or fetus in the previously conducted literatures (20,32).





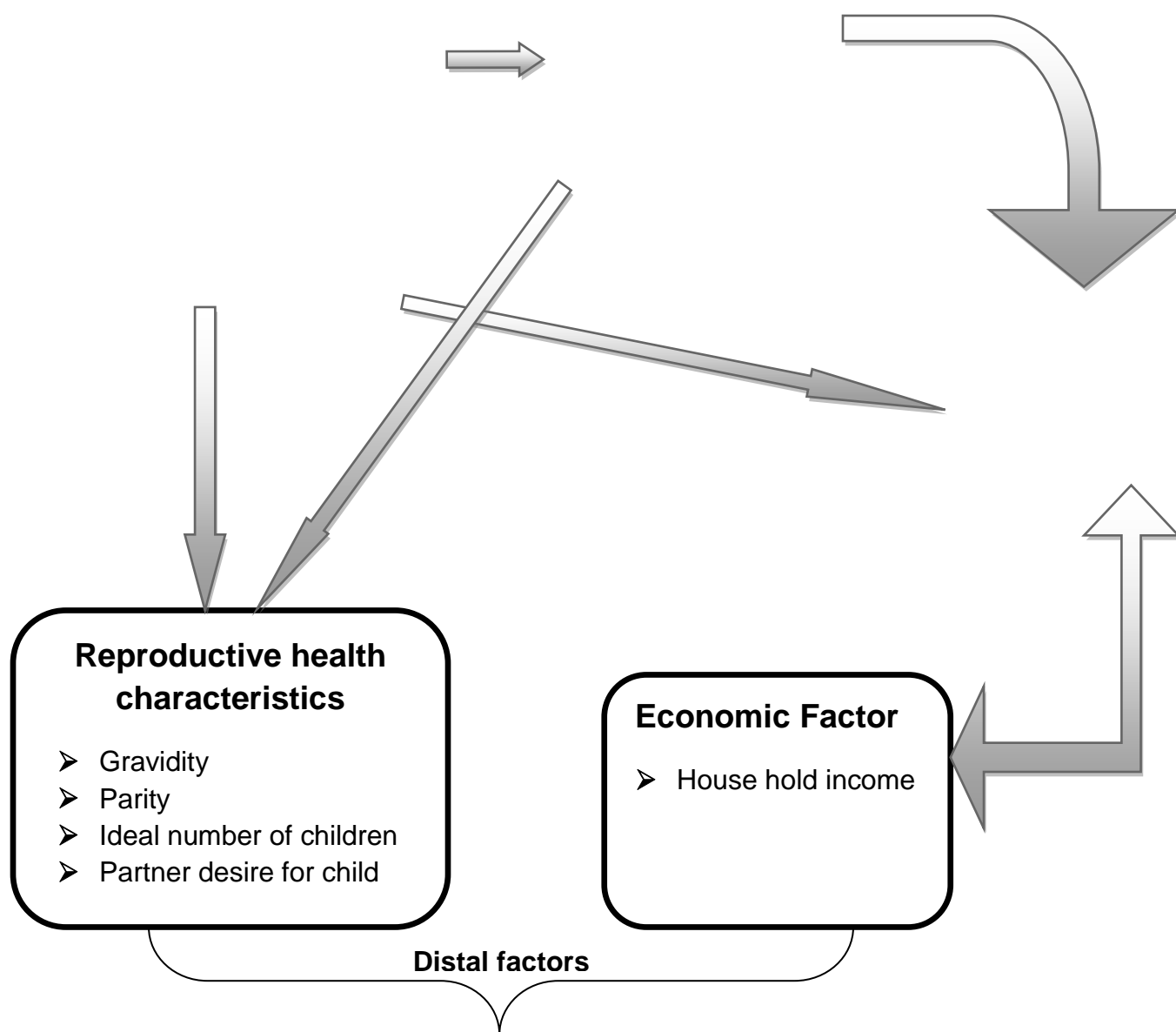


Figure 1: Conceptual framework on associated factors of unintended pregnancy self developed from the literature review.

### 1.3. Justification

Maternal mortality in Ethiopia is very high. Besides decreasing maternal mortality and child illness are the two main points of MDG. As well the child illness and death will

increase if there is inadequate immunization and improper breast feeding. Moreover, it leads younger age group girls to school dropout. For all this complication unintended pregnancy will take the first place as a cornerstone. In addition, Ethiopia is the second leading highest population number in Africa and it's becoming pressing issue in the country and giving birth of unintended pregnancy will further worsen the complication of population growth. Even if the percentage of unwanted birth decreased according to EDHS 2011, however, the percentage of pregnancy wanted later doesn't show improvement (19-20%).

So to minimize this entire problem studies on unintended pregnancy is very much significant and essential. However, even if the problem is broad and affects every aspect of mother, child, family and country, per my knowledge the studies we have on this area specially on the sub national level are very much limited, untouched and not enough to fill the gap.

This paper aimed to fill the information gap on unintended pregnancy and to be a backup for MDG four and five achievements. In addition, it may also be used by policy makers, health workers, governmental and nongovernmental organizations as reference in policy making and planning for preventing unintended pregnancy in the community. Thus, this paper was conducted to determine the proportion and associated factors for being unintentionally pregnant among pregnant women in Debrebrehan, north showa zone, Amhara, Ethiopia.

## **2.Objectives**

### **2.1. General objective**

- To assess the proportion and associated factors of unintended pregnancy among pregnant women in Debrebrehan, north showa zone, Amhara, Ethiopia 2014.

## **2.2. Specific objectives**

- To determine the proportion of unintended pregnancy among pregnant women in Debrebrehan, north Showa zone, Amhara, Ethiopia 2014.
- To identify associated factors of unintended pregnancy among pregnant women in Debrebrehan, north Showa zone, Amhara, Ethiopia 2014.

### **3. Methods**

#### **3.1. Study design**

Community based cross sectional study was conducted to identify the proportion and associated factors of unintended pregnancy.

#### **3.2. Study area and period**

This study was conducted in Debrebrehan rural and urban kebeles, north Showa zone, Amhara, Ethiopia from July 1-30, 2014. According to Debrebrehan town health office, Debrebrehanis located 130 km North East of capital city of Ethiopia, Addis Ababa. It is administratively divided into fourteen kebeles. This includes nine urban kebeles and 5 rural kebeles. The rural kebeles are in average 7 to 12 kilometer far from the town. Based on the 2014 estimation report, Debrebrehan has 84920 total populations, of which 72393 are in urban and 12527 are in rural kebeles. From total urban and rural population 37476, 6257 were females respectively. Out of these 19387 and 3355 are women in childbearing age groups (15-49 years) in both urban and rural area with estimated number of 2718 pregnant mothers. In the town there are 2 hospitals, 2 health centers, 12 pharmacies and 1 maristopes clinic. As well there are 5 health posts in rural area. The health coverage, antenatal follow up and family planning coverage in this area is 66%, 47% and 83% respectively.



★ - Location of Debrebrehan town

*Figure 2: Amhara regional state, north showa zone map, Ethiopia 2014.*

### **3.3. Source population**

All pregnant women living in Debrebrehan town.

### **3.4. Study population**

All pregnant women in the selected clustered kebeles.

### 3.5. Inclusion and Exclusion criteria

#### Inclusion criteria

All pregnant women in the selected kebeles were included.

#### Exclusion criteria

Pregnant women who were not resident for at least six months in Debrebrehan urban or rural kebeles were excluded.

### 3.6. Sample size and sampling procedure

#### 3.6.1. Sample size determination

Sample size was calculated by using single population proportion formula by taking proportion of 29%, which is from EDHS 2011. And considering the following assumptions

- Confidence interval (Z) - 95%, Margin of error ( $\alpha$ ) - 5%, Precision (d) - 5%, proportion (p) - 29%

$$N = \frac{Z_{\alpha/2}^2 p (1-P)}{d^2} = \frac{0.95^2 0.05^2 0.29(1-0.29)}{0.05^2 0.0025} = \frac{(1.96)^2 0.29(0.71)}{0.0025}$$

$$N = \frac{(3.8416) (0.2059)}{0.0025} = 316.4$$

- By considering design effect the minimum sample size become

$$\Rightarrow 316.4 * 2 = 632.8 = 633$$

- For possible non response rate=10%  
 $\Rightarrow 633 + 10\% (633)$

$$\Rightarrow 633 + 63.3 = 696.3 = 697$$

### 3.6.2.Sampling technique

Stratified Cluster sampling technique was used to select the study participants. Urban and Rural kebeles separated with strata then from total of nine urban kebeles five kebeles and from total of five rural kebeles three kebeles were selected randomly by lottery method then by cluster sampling all pregnant women in the selected cluster kebeles were taken as a study participant. The data collectors visit each house in the selected clustered kebeles to find a study participant. If more than one eligible study participant found in one house both were taken. If the household not eligible the next household were considered.

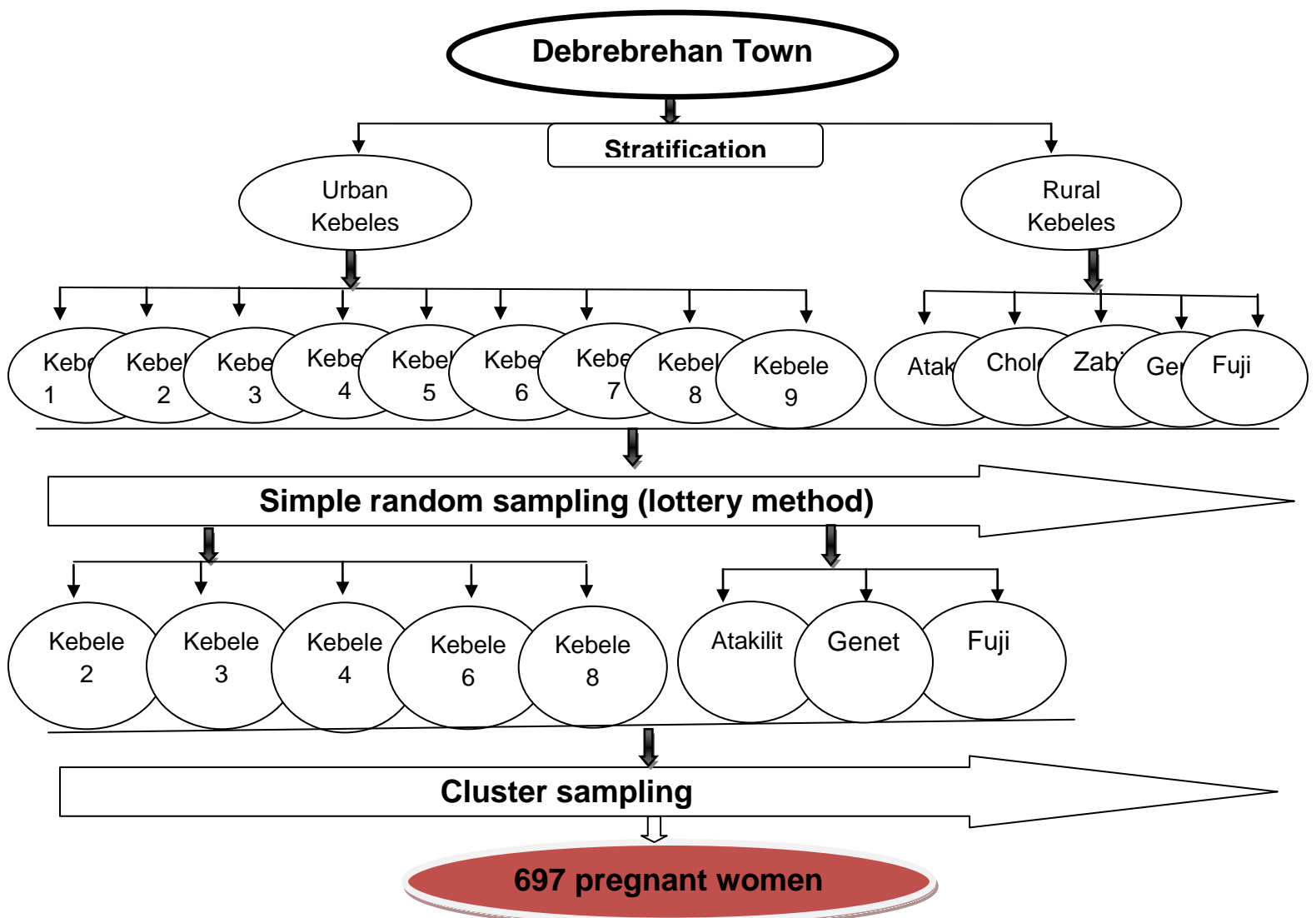


Figure 3: Schematic presentation of sampling procedure on proportion and associated factors of unintended pregnancy in Debrebrehan urban and rural kebeles, north showa zone, Amhara, Ethiopia, 2014.

### 3.7.Variables

#### 3.7.1.Dependent variable

- Unintended pregnancy

#### 3.7.2.Independent variable

- **Sociodemographic characteristics**
  - Age
  - Education
  - Residence
  - Marital status
  - Occupation
  - Estimated time to walk to the nearest health facility
- **Economic factors:-** Household income
- **Reproductive Health characteristics**
  - Parity
  - Gravidity
  - Partner desire for child and ideal number of children
- **Contraceptive characteristics:-** ever use of family planning

### 3.8.Operational definitions

- **Unintended pregnancy:-** is a pregnancy, which is either mistimed or unwanted at the time of conception
- **Mistimed:** - a pregnancy, which has occurred without the wish of the woman at the specific time of occurrence of the pregnancy, but she has a desire to be pregnant and have a child or children sometimes in the future.
- **Unwanted:** - Pregnancy that has occurred to the women when no children or no more children were desired.
- **Pregnant women:** -A woman who is amenorrhea for at least two months and has minor signs of pregnancy as well as the woman believes to be pregnant or a woman who claims that she was told to be pregnant by health worker on her visit to health institution and believes to be pregnant.



- **Ever used:-** Is a woman who had used a modern contraceptive before in the past
- **Never used :-**Is a woman who had never used a modern contraceptive any time

### **3.9.Data collection procedure and Data quality control**

#### **3.9.1. Data collection procedure**

Data was collected from all pregnant women in the selected kebeles at home with pretested and semi structured interviewer administered Amharic prepared questioner, which is adopted from EDHS 2011 measure of pregnancy intention, from July 1-30 2014.

Eight diploma midwives and two supervisors with degree level participated in the data collection. Training for data collectors and supervisor was given for two days on study objectives, data collection procedure, interview techniques and how to solve problems. Before administering the questionnaire the interviewers introduced themselves and explained about the study, then took informed consent from the women. If the respondent not around during the first visit two more additional visits was held.

#### **3.9.2.Data quality control**

To ascertain the data quality, certain procedures were undertaken. Questioner was first adopted in English then translated to Amharic language and retranslated to English to maintain its consistency. Pretest was undertaken on 35 pregnant women before the actual study on Debreberhan Kebeles which is not included on the actual study and questioner amended accordingly.

Ahead before the data collection, two days training was given for both the data collectors and the supervisors. Across the track of data collection the supervisors were monitoring the data collectors at each site. Regular meetings were carried out between the data collectors, supervisor and the investigator each Friday then problems or faults during the data collection time were discussed and solutions were given right away. Finally the collected data were checked for its completeness and accuracy before data entry.

### **3.10. Data processing and analysis**

Foremost data completeness was checked manually, coded and entered into Epi- info version 7 then exported to SPSS version 20 for cleaning and data analysis.

Tables, graphs and frequency were used to report the descriptive result. Binary and multiple logistic regressions were equipped to identify associated factors of unintended pregnancy. In binary logistic regression all variables which have  $p \text{ value} \leq 0.2$  were inserted in to multiple logistic regression to adjust the effect of confounders and to distinguish the associated factors. To determine the significance, odds ratio with confidence interval 95%,  $P\text{-value} \leq 0.05$  was used.

### **3.11. Ethical consideration**

Ethical clearance was obtained from the ethical review committee of University of Gondar College of medicine and health science department of midwifery and permission letter was obtained from Debrebrehan town health office then from each kebeles. For all study participant's information was given about the study before the data collection on its possible risk, benefit, confidentiality, privacy, its voluntary activity, right of withdrawal and the time the questionnaire take then verbal consent was obtained. Privacy and confidentiality was kept, name of the mother was not asked and recorded.

## **4. Results**

### **Response rate, socio demographic and economic characteristics**

A total of 697 participants were interviewed with response rate of 690(98.99%).Majority of study participants were in the age group of 25-34, 465 (67.4%) with overall mean (29.62) and SD ( $\pm 5.21$ ).As well more than half of the study participants were resided in urban area 466 (67.5%) and 523 (75.8%) were currently married. Beside, majority of them are at tertiary education level 290 (42%) and are government and private employee 257 (37.2%). Five hundred forty seven (79.3%) study participants claim to travel <40 minute to reach to the nearest health facility (Table1).Participants house hold income ranges from 200 to 8600 birr with 2000 median and 1462.5 inter quartile range.

Table 1: Socio demographic and economic characteristics of study participants in Debrebrehan, north showa zone, Amhara region, Ethiopia, July 2014 (n=690).

Characteristics		Frequency	Percentage
<b>Age</b>	≤24	112	16.2
	25-34	465	67.4
	≥35	113	16.4
<b>Mean (29.62) and SD(±5.21)</b>			
<b>Residence</b>	Urban	466	67.5
	Rural	224	32.5
<b>Marital status</b>	Currently married	523	75.8
	Formerly married*	76	11.0
	Never married	91	13.2
<b>Education level</b>	Tertiary	290	42.0
	Secondary	208	30.1
	Primary	113	16.4
	No education	79	11.4
<b>Monthly income</b>	≥1501	456	66.1
	1001-1500	125	18.1
	501-1000	76	11.0
	≤500	33	4.8
<b>Occupation</b>	Government employee	238	34.5
	Private employee	19	2.8
	Farmer	133	19.3
	Merchant	89	12.9
	Daily labor	85	12.3
	Student	32	4.6
	Housewife	94	13.6
<b>Time to walk to the nearest health facility</b>	< 40 minute	547	79.3
	40-79 minute	76	11.0
	> 80 minute	67	9.7

Formerly married\*:- Divorced, widowed, Separated

## Reproductive and Contraceptive Utilization characteristics

From the total study participants, 318 (46.1%) have 3-4 gravidity and 394 (57.1%) have 1-2 parity respectively. Besides 367 (53.2%) pregnantmothers reported to have 3-4 ideal numbers of children in their whole life. Moreover 229 (33.2%) married participants' partners agree onthe number of children. On the other hand 447 (64.8%) study participants had ever used FP (Table 2).

Table 2: Reproductive and contraceptive utilizationcharacteristics of pregnant mothers in Debrebrehan, north showa zone, Amhara region, Ethiopia,July 2014 (n=690).

Characteristics		Frequency	Percentage
<b>Gravidity</b>	1-2	282	40.9
	3-4	318	46.1
	$\geq 5$	90	13.0
<b>Parity</b>	0	134	19.4
	1-2	394	57.1
	3-4	133	19.3
	$\geq 5$	29	4.2
<b>Ideal number of children</b>	5-7	119	17.2
	3-4	367	53.2
	0-2	204	29.6
<b>Partner desire for a child</b>	Agree	229	33.2
	Don't Know	171	24.8
	Disagree	123	17.8
<b>Ever use of FP</b>	Yes	447	64.8
	No	243	35.2

## Proportion of unintended pregnancy

From a total of 690 pregnant mothers 162(23.5%) with 95 % CI (20.3, 26.8) participant insured their current pregnancy as unintended, from this 73(10.58%) reported their pregnancy as unwanted and the rest 89(12.9%) accounted their pregnancy as mistimed (figure 4).

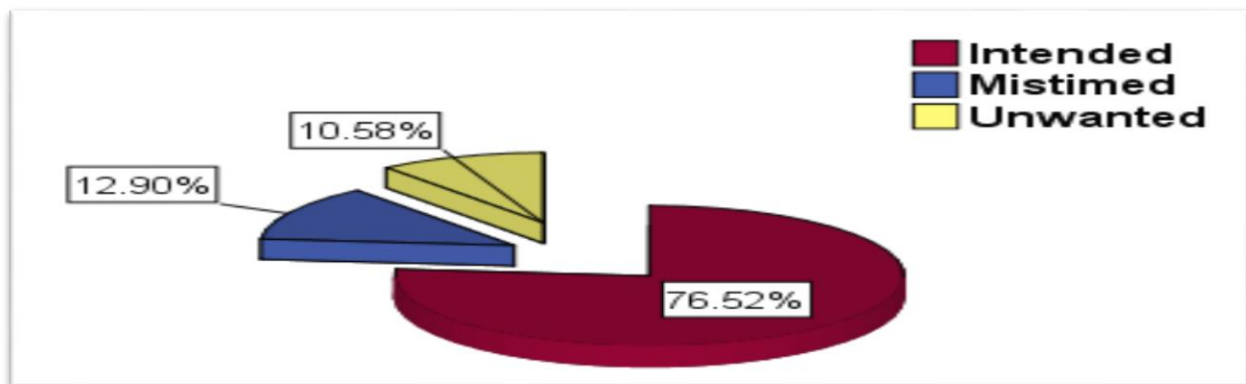


Figure 4: Proportion of unintended pregnancy in Debrebrehan, north showa zone, Amhara region, Ethiopia, July 2014.

From the mentioned reasons for failure to avoid unwanted and mistimed pregnancy, Contraceptive failure (24.66%) were the major reasons for unwanted pregnancy. Whereas for mistimed pregnancy not using FP (42%) take the highest percentage.

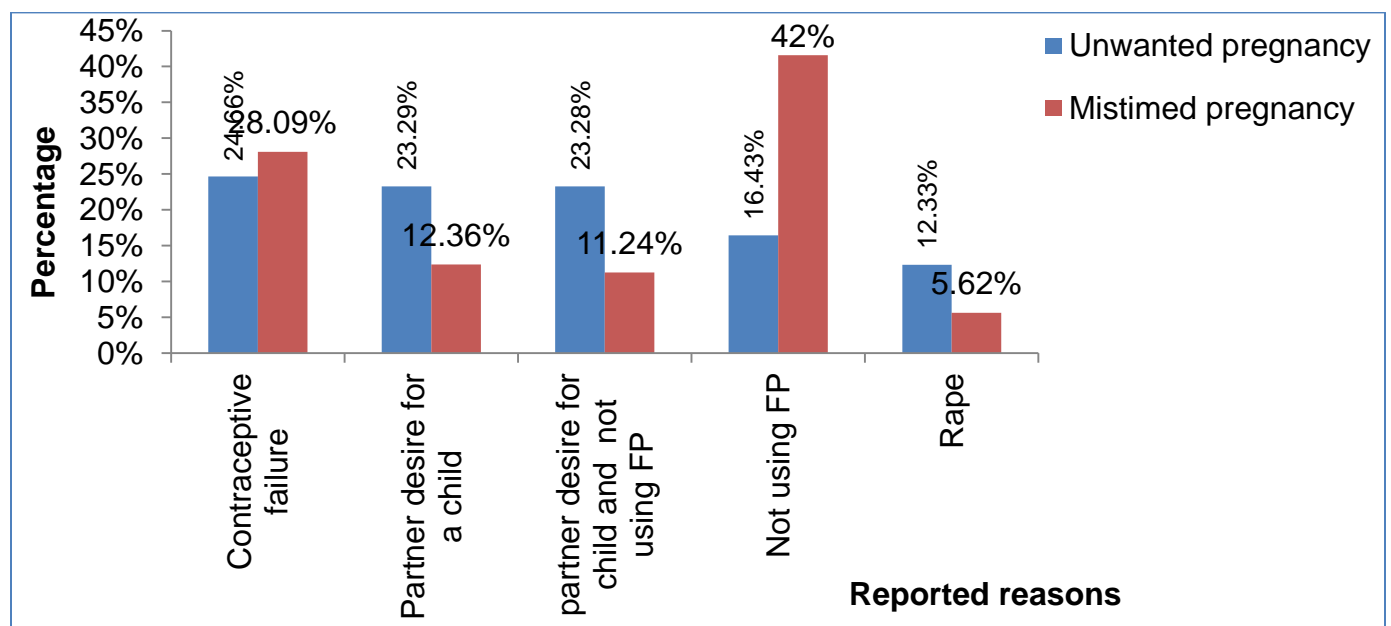


Figure 5: Reported reasons for unintended pregnancy in Debrebrehan, north showa zone, Amhara region, Ethiopia, July 2014.

### Factors associated with Unintended Pregnancy

In binary logistic regression age, marital status, education, income, estimated time to walk to the nearest health facility, gravidity, parity, partner desire for child, ever used FP have p value  $\leq 0.2$ .

In Multivariable logistic regression formerly married (AOR 8.42: 4.07, 17.39) and never married (AOR 9.21: 4.27, 19.86), estimated time to walk to the nearest health facility  $>80$  minute (AOR 3.56: 1.69, 7.53), gravidity  $\geq 5$  (AOR 3.88: 1.41, 10.69), 1-2 parity (AOR 0.43: 0.21, 0.87) and partner disagreement (AOR 4.09: 2.07, 8.08) were significantly associated with unintended pregnancy with p value  $\leq 0.05$  (Table 3).

Table 3: Logistic regression analysis on factors associated with unintended pregnancy in Debrebrehan, north showa zone, Amhara region, Ethiopia, July 2014 (n=690).

Variables	Status of current pregnancy		COR(95%CI)	P-value	AOR(95%CI)
	Intended	Unintended			
Age					
25-34	383(82.4%)	82(17.6%)	1		
≤24	69(61.6%)	43(38.4%)	2.91(1.86,4.56)	0.71	1.15(0.56,2.36)
≥35	76(67.3%)	37(32.7%)	2.27(1.44,3.60)	0.04	1.83(1.01,3.30)
Marital status					
Currently married	442(84.5%)	81(15.5%)	1		
Formerly married	39(51.3%)	37(48.7%)	5.18(3.12,8.61)	0.00	8.42(4.07,17.39)
Never married	47(51.6%)	44(48.4%)	5.11(3.18,8.21)	0.00	9.21(4.27,19.86)
Education status					
Tertiary	235(81.0%)	55(19.0%)	1		
Secondary	161(77.4%)	47(22.6%)	1.25(0.81,1.93)	0.50	1.2(0.71,2.02)
Primary	80(70.8%)	33(29.2%)	1.76(1.07,2.91)	0.59	1.21(0.62,2.35)
No education	52(65.8%)	27(34.2%)	2.22(1.28,3.85)	0.95	0.97(0.42,2.23)

**Income**

≥1500	348(76.3%)	108(23.7)	1		
1001-1500	103(82.4%)	22(17.6%)	0.69(0.41,1.14)	0.37	0.75(0.40,1.41)
501-1000	62(81.6%)	14(18.4%)	0.73(0.39,1.35)	1.00	1.00(0.47,2.15)
≤500	15(45.5%)	18(54.5%)	3.87(1.89,7.93)	0.23	1.74(0.70,4.33)

**Time to walk to the nearest health facility**

< 40 minute	436(79.7%)	111(20.3)	1		
40-79minute	59(77.6%)	17(22.4%)	1.13(0.64,2.02)	0.86	1.08(0.49, 2.35)
>80 minute	33(49.3%)	34(50.7%)	4.05(2.40,6.82)	<b>0.00</b>	<b>3.56(1.69,7.53)</b>

**Gravidity**

1-2	221(78.4%)	61(21.6%)	1		
3-4	264(83.0%)	54(17.0%)	0.74(0.49,1.11)	0.41	1.35(0.66,2.76)
≥5	43(47.8%)	47(52.2%)	3.96(2.40,6.54)	<b>0.01</b>	<b>3.88(1.41,10.69)</b>

**Parity**

0	90(67.2 %)	44(32.8%)	1		
1-2	346(87.8%)	48(12.2%)	0.28(0.18,0.45)	<b>0.02</b>	<b>0.43(0.21,0.87)</b>
3-4	82(61.7%)	51(38.3%)	1.27(0.77,2.10)	0.88	1.08(0.41,2.82)
≥5	10(34.5%)	19(65.5%)	3.89(1.67,9.06)	0.41	1.80(0.44,7.36)

**Partner desire for child**

Agree	211(92.1%)	18(7.9%)	1		
Don't Know	150(87.7%)	21(12.3%)	1.64(0.85,3.19)	0.30	0.66(0.30,1.46)
Disagree	81(65.9%)	42(34.1%)	6.08(3.31,11.17)	<b>0.00</b>	<b>4.09(2.07,8.08)</b>

**Ever use of FP**

Yes	363(81.2%)	84(18.8%)	1		
No	165 (67.9%)	78(32.1%)	2.04(1.43,2.93)	0.07	1.53(0.97,2.41)



## 5. Discussion

In this study the proportion of unintended pregnancy is determined as 23.5%. Never married and formerly married, estimated time to walk to the nearest health facility >80 minute, gravidity  $\geq 5$ , 1-2 parity, partner disagreement on desire number of child are factors significantly associated with unintended pregnancy.

The proportion of unintended pregnancy in the current research is in line with the national study conducted in Ethiopia which is 24%(5). And study in kersa woreda eastern Ethiopia Harar which is 27.9% (18). However it is less than the result reported in the national figure EDHS 2011 which is 29%(16). And also lower than the studies in different parts of Ethiopia, in Hosanna and in Ganji woreda west wollega Oromia which is 34% and 36.5% respectively(20,32) and from Asian country in Nepal (41%) (4). The result may be lower due to, ones pregnancy happened there is tendency to confirm as intended(35). Furthermore according to preliminary mini EDHS 2014 report, current FP utilization in Ethiopia increased, this has its own role in the lowering of unintended pregnancy(36). In addition this variance might be on account of the difference in socio demographic and cultural status of the study areas.

The odds of having unintended pregnancy among formerly married women are 8.42 times more likely than currently married women (AOR 8.42: 4.07, 17.39). In similar manner the likelihood of practicing unintended pregnancy among never married women are 9.21 times more likely than currently married women (AOR 9.21: 4.27, 19.86). This might be explained by married women whose husbands nearby have support and backup and their life is settled than formerly and never married ones. Besides in our society becoming pregnant out of marriage is not socially acceptable this may cause an impact on those never married pregnant mother on their intention of pregnancy. Likewise it is obvious that financially it would be better to be in union to support each other economically than being single, thus never married, widowed and divorced mothers possibly may be affected by this reason and may alter their intention of pregnancy.

On the other hand, as estimated time to walk to the nearest health facility increases unintended pregnancy increases. Those women who travel >80 minute are 3.56



timesmore likely to report their pregnancy as unintended (AOR 3.56: 1.69,7.53), this may be due to, even if health extension workers assigned to each Kebele, because of less supply of FP and workload they may fail to provide services(37). Thus the women may not get FP method that she wants and to obtain that if the health facility is far because of house workload and responsibility inside and outside ofhouse and cost of travel women may not use this FP method on time, this may lead her to unintended pregnancy. This is consistent with the study conducted in kersa woreda eastern Ethiopia which shows association of unintended pregnancy to estimated time to walk to the nearest health facility(AOR 2.25: 1.49, 3.39)(18).

In the present study number of pregnancy shows significant association with the outcome variable. Women whose gravidity $\geq 5$  are 3.88 times more likely to have unintended pregnancy than those whose gravidity 1-2 (AOR 3.88: 1.41, 10.69).This is parallel to the study conducted in Hosanna.which reviled that, number of pregnancy was significantly related to unintended pregnancy (AOR 5.6: 1.62, 19.41)(20). The possible reason for this may be due to with repeated pregnancy mothers may become exhausted. Besides if her all pregnancies end up with alive child she may reach to her desire number of child and consider the next pregnancy as unintended.

Furthermore, women with parity 1-2 were less likely to have unintended pregnancy as compared to parity 0 (AOR 0.43: 0.21, 0.87).This might be due to, having first and second child is far more interesting and different and it is true that this parity groups are more excited to have a child for first and second time and moreover they are on the way to attend their desired number of child, so their pregnancy is most likely to be intended.

Another variable which shows significant association with unintended pregnancy are partner desire for child. The likelihood of having unintended pregnancy among women who disagree with their partner on the desired number of children are 4.09 times more likely than those who agree with their partner (AOR 4.09: 2.07,8.08). This result is consistent with the study conducted in Hosanna town (AOR 3.24:1.69, 6.21)(20).And report in Ganji woreda west wollega Oromia (AOR 2.26: 1.23, 4.14)(32). The possible reason for this is difference in men and women interest in number of children and Men's want more child than women,socio-culturally child is seen as wealth in the community.

## **6. Limitation of the study**

-  The study was not integrated with qualitative study
-  Laboratory pregnancies confirmation mechanism was not used

## **7. Conclusion**

Proportion of unintended pregnancy in the study area was found to be high. Formerly and never married respondents, estimated time to walk to the nearest health facility >80 minute,  $\geq 5$  gravidity, 1-2 parity and partner disagreement on desire number of child were the variables that are found to be significantly associated with the outcome variable.

## **8. Recommendation**

### **To federal ministry of health**

- ✓ Further workup needed on the prevention of unintended pregnancy to minimize the proportion by formulating FP strategies.

### **To Debrebrehantown health office**

- ✓ Increase access to health facility by collaborating with North showa zone health department.

### **To health workers**

- ✓ Family Planning workup need to target mainly never married, divorced, widowed, separated and as well multigravid mothers through counseling, service and health education on consistence and correct use to encourage FP users and minimize unintended pregnancy.
- ✓ Provide health education on limitation of number of children.
- ✓ Incorporate partners in every aspect of maternal health issue to increase couples communication in their reproductive life.

### **To researchers**

- ✓ Unlike to this study, conducting a community based study by integrating qualitative with quantitative study is crucial to identify main causes of unintended pregnancy
- ✓ Further research needs to be conducted by using laboratory confirmation mechanism of early pregnancies

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## **10. Annexes**

### **10.1 Annex 1: Consent form (English)**

Informed consent for pregnant women who are living in Debrebrehan urban and rural kebeles and who are selected to participate on this research

**Title of the research:** Proportion and associated factors of unintended pregnancy in Debrebrehan, North showa zone, Ethiopia 2014.

**Principal investigator:** Kidest Getu

**Advisor:** Sr. Mignote Hailu and Sr. Martha Berta

**Organization:** University of Gondar: College of medicine and health science

**Sponsor:** University of Gondar

#### **Part I: Informed Sheet**

Good morning or Good afternoon

My name is ----- am data collector on research conducted by Kidest Getu on pregnant women's. I will give you information about the research and ask for your permission to participate. Ahead before your participation you can ask and speak any person you want about the research. While am giving the information on the research if there is something unclear please stop me and ask, I will explain it to you.

#### **Purpose of the research**

This research is to assess the pregnant mothers if their pregnancy is intended before pregnancy or not and if the pregnancy is unintended what was the cause for this unintended pregnancy. Unintended pregnancy is a cause for many maternal and child illness and death, therefore if most pregnant women's in this area are becoming pregnant unintendedly, this study will support policy makers and other concerned bodies to design and plan an intervention strategy.

## **Type of the research, duration, procedure and participants**

This research involves pregnant women like you, if you are voluntary to participate on this research you will be asked questions related to the current pregnancy. Totally it will take a maximum of 30 minutes.

## **Voluntary participation**

You are involving in this study voluntarily. It's your interest to participate or not. There is no negative impact on you whether you participate or not. In addition, after you say ok you can stop participating in the middle even if you were willing to participate at the beginning.

## **Confidentiality**

In this research, we will ask you questions regarding your current pregnancy and the result will be kept secretly no one will see it unless the researcher and we do not ask you your name to label rather we coded it and it will be handled and kept secretly that nobody can reach it

## **Benefits and Risks**

You may not see the benefit of the study right away, but broadly it may benefit all pregnant and non pregnant women in this region. On this study there is no known risk that causes harm to mother or fetus.

## **Incentive for participation and Right to refuse or withdraw**

There is no any incentive for your participation in this research. And you have the right to refuse or to participate in this research; there is nothing you will lose. Also, you can stop, refuse or withdraw participating any time you want, you will not be affected by any case.

## **Who to contact**

This research is supported, reviewed and approved by Gondar University if you want further information on this research you can use contact number written below.

1. University of Gondar: Sr. Mignote Hailu and Sr. Martha Berta

Tel: 0912013006/0913468177

E-mail: elatman.hailu86@gmail.com / mberta7@gmail.com

2. Investigator: Kidest Getu

Tel: 0913 10 23 82

E-mail: kidestgetu2006@gmail.com

## Part II Consent Form

I have read all the above statements or it has been read to me .I understand it well, I got the chance to ask questions and all my questions answered well in satisfactory way. I accept to participate in this research voluntarily.

Accepted

☐

Not accepted

☐

## 10.2. Annex 2: Questionnaire in English version

Identification	
Questionnaire number	_____
Household number	_____
Date of interview(Ethiopian calendar)	[__ / __ / __] d m y
Study site	Kebele-----

S.no	Questions	Answers	Remark
<b>Part I Sociodemographic and economic status</b>			
101.	Age	_____	
102.	Residence	01. Urban 02. Rural	
103.	Marital Status	01. Never married 02. Married 03. Divorced 04. Separated 05. Widowed	
104.	Education	01. No education 02. Primary 03. Secondary 04. Tertiary	
105.	Occupation	01. Farmer 02. Student 03. Private employee 04. Daily labor 05. Merchant 06. Governmental employee 07. Housewife	

		08. Jobless 09. Other	
106.	Estimated time to walk to the nearest health facility?	01. > 40 minute 02. 40-79 minute 03. < 80 minute	
107.	What is the total monthly income of the family in ETB?	-----ETB	
<b>Part II : Reproductive Health characteristics</b>			
201.	Have you ever been pregnant before?	01. Yes 02. No	If no go to question number 204
202.	If yes for the above question, how many times including now?	-----	
203.	If yes for question number 201 how many births do you give until now including birth of dead fetus after seven month?	-----	
204.	If you could go back to the time you don't have children and could choose the number of children to have in your whole life, how many would that be?	-----	If she have alive children before
	If you could choose exactly the number of children to have in your whole life, how many would that be?	-----	If she have no alive children before
205.	For the current pregnancy, when you got pregnant did you want to get pregnant at the time?	01. Yes I want 02. No I don't	If yes go to question number 209
206.	If No for the above question, did you want to wait until later or did you not want later any more children?	01. Later 02. No more	If later go to question number 208
207.	If No more for the above question, What was the reason for the unwanted pregnancy?	01. I was not using family planning 02. I got pregnant while am using family planning 03. Because my partner need child 04. Pregnancy is because of rape	

		05. Other	
208.	If later for question number 206, What was the reason for the early pregnancy?	01. I was not using family planning 02. I got pregnant while am using family planning 03. Because my partner need child 04. Pregnancy is because of rape 05. Other	
209.	Partner desire for a child?	01. Both want same 02. Husband want more 03. Husband want fewer 04. Don't know	If women is married and pregnant from her alive partner
<b>Part III. Contraceptive characteristics</b>			
301.	Have you ever used modern family planning before?	01. Yes 02. No	

You finished your question Thank you

Name of interviewer -----

Supervisor's name-----

Date in Ethiopian calendar-----

Date in Ethiopian calendar-----

Signature-----

Signature-----

### 10.3 Annex 3: Consent Form (Amharic)

#### የፍቃደኝነት ትመረጋገጫ መግለጫ

ይህ የፍቃደኝነት ትመረጋገጫ መግለጫ በደብረ ብርሃኑ በከተማዎችና በገጠር ቀበሌዎች ለመፍፋት እና በጥናቱ ላይ እንዲሳተፉ ለተመረጡ ፍላጎት እና ቶች የተዘጋጀ ነው፡፡

#### **የጥናቱ ርዕስ፡**

ያልታሰበ እርግዝና መጠን እና ተያያዥነትን ያቆማ በደብረ ብርሃኑ ሰሜን ሸዋ ዞን አሜሪካን ስኬት 2014

#### **የጥናቱ ተመራማሪ፡** ቅድስት ጌቱ

#### **አማካሪ፡** ሲ/ር ምኞት ሀይለ እና ሲ/ር መረታበር ታ

#### **ተቆም፡** ጎንደር ዩኒቨርሲቲ የሜዲሲን እና የጤና ሳይንስ ኮሌጅ

#### **ድጋፍ ሰጪ፡** ጎንደር ዩኒቨርሲቲ

#### ስለ ጥናቱ መረጃ

እንደ ምን አደርገው ይሞክሩ እንደ ምን ዋልሽ

ስሜ

ይባላል፡፡ በነፍሱ እና ቶች ላይ በቅድስት ጌቱ በሚከናወኑት ጥናቶች ላይ ምስጋና ያሳውቃል፡፡ ስለ ጥናቱ ምንነት ትመረጃ እና ስለ ጥናቱ ፍቃደኝነት ሽንገል መቃወም ለሁሉም፡፡ በጥናቱ ላይ ከመሳተፍ ሽንገል ትጥቅ ቁዋችን መንሳት እንዲሁም ፈለግሽውን ሰው በቅድሚያ መመከር ትችላለሽ፡፡ መረጃውን በምስጋና ስላለህ ትገልፅ ያልሆነ ልሽን ገርካለህ መንፈሳዊ ወይን ሳትሰጥ ቅድሚያ ለሽመግብራሪ ያውን እንሰጥሃለሁ፡፡

#### የጥናቱ ጥቅም

ይህ ጥናት የሚመለከተው ፍላጎት እና ቶች እርግዝና ውስጥ መካተት አስፈላጊነት ወደ ይደረገው ሚሳሌ ውስጥ መረጋገጥ እና ሳይታሰብ ይፈለግበታል፡፡ ምንም ባደረገም ድንና ቸውሮ መላኩ ውስጥ መቆን ውጭ፡፡ ያልታሰበ እርግዝና ለብዙ እና ቶች እና ህፃናት ህመም እና ሞት ምንም ዓይነት ውጭ፡፡ ስለዚህ ይህ ጥናት በዚህ አካባቢ ያልታሰበ እርግዝና በብዙ ትመራ፡፡ ከገገን ጠቅላላ ለመቅረብ መከላከል ህግ አወጪዎች እና ሌሎች የሚመለከቱትን ፍላጎት ቅድሚያ ህግ በሚመለከት ሁኔታ መሆን ያለ ግላል፡፡





1. ጎንደር ዩኒቨርሲቲ፡ ሲ/ር ምኞትሀይሉእና ሲ/ር ሚታበርታ

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2. የጥናቱተመራማሪ ፡ ቅድስትጌቱ

ስልክ፡ 0913 10 23 82

ኢሜል፡ [kidestgetu2006@gmail.com](mailto:kidestgetu2006@gmail.com)

### የፍቃደኝነት ማረጋገጫ

ከላይ የተጠቀሰውን በሙሉ ንብረት ለሁወደምትነት በልጅ ልብነት ክልተረድቻለሁምጥያቄዎችን ምላሽ መጠየቅ እድሉተሰጥቶልላለሁ፡፡ ጥያቄዎቼም አጥጋቢ መልስ አግኝቻለሁ፡፡ በዚህ ጥናት ላይ ለመሳተፍ ፍቃደኛ መሆኔን እና ገልጻለሁ፡፡

ተስማምቻለሁ አልተስማምቻለሁ

☐☐

## 10.4 Annex 4 : Questionnaire in Amharic

### መግቢያ

		መላያ
መግቢያ ቁጥር		
የ ቤት/መላያ ቁጥር /ከድ		
የ ተጠያቂው ስም		
የ ጥናቱ ቦታ		
ክፍል I ስለሚመለከቱት		
ተራቁጥር	ጥያቄ	
101.	እድሜ	
102.	የ መኖሪያ ቦታ	

103.	የ ትዳር ሁኔታ
104.	የ ትምህርት ደረጃ
105.	የ ስራ ሁኔታ
106.	በ ቅርብ ትውልድ ውስጥ ጤና ተቆላጭ ማግኘት ማቋረጥ ስንት ዓቅቷል?
107.	አጠቃላይ የ ቤተሰብ ሽያጭ ወር ገቢ በ ኢትዮጵያ ብር ስንት ነው?
<b>ክፍል II ስነ ተዋልዶ</b>	
201.	ከዚህ በፊት አርግዘሽ ታወቂያለሽ ?
202.	ለላይኛ ውጥያቄ አወቃለሁካለች፡ እስካሁን ስንት ጊዜ?
203.	ለጥያቄ ተራቁጥረን 201አ ወቃለሁካለች፡ እስካሁን ስንት ጊዜ ወልደሽ ታወቂያለሽ? ከሰባት ወር በላይ ሞቶር ተወለደልጅ ይቆጠራል

204.	<p>ወደሁዋላ ተመልሶ ሽልጆች ሳይኖሩ ሽብርት ምን ያህል ልጆች እንዲኖሩ ሽትፈልጊነት በረ ?</p> <p>ወደፊት በህይወት ዘመኑ ምን ያህል ልጆች እንዲኖሩ ሽትፈልጊ ያለሽ ?</p>
205.	በአሁኑ እርግዝና በአረገ ዝሽበት ወቅት በጊዜ ውልጅ እንዲኖር ሽትፈልጊነት በረ ?
206.	<p>ለላይኛ ውጥያቄ መልስ አልፈልግም በርካላች:</p> <p>እርግዝና ውእን ዲቆይትፈልጊነት በረ ወይስ አጠቃላይ ልጅ እንዲኖር ሽትፈልጊ ምን በረ ?</p>
207.	ለላይኛ ውጥያቄ መልስ አጠቃላይ እንዲኖር ኝኡ ልፈልግም በርካላች: ለዚህ ላልተፈለገ እርግዝና ምክንያት ?
208.	ለጥያቄ ተራቁጥሮ 206 መልስ አዎ እንዲቆይ እፈልግ በርካላች: ከሰብሽበት ጊዜ ቀድሞ እንድታረግ ዝያደረግ ወምክንያት ምን በረ ?
209.	ባለቤትሽያጭ ምዴል ገዢ ልጆች ማከን ?

301.	በህይወትዘመን ሽዘመን ዊየ ወሊድመቆ ጣጣሪ ያተጠቅመኝ ታወቂ ያለኝ?
------	--

ጥያቄውን ጨሰዋል አመክንዮ ለሁ: :

የጥያቄው ስም ----- የተቆ ጣጣሪ ወሰን ስም -----

ቀን -----

ቀን -----

ፊርማ -----

ፊርማ -----

### 10.5 Annex 5 : Declaration

I, the undersigned, clinical midwifery student declare that this thesis is my original Work in partial fulfillment of the requirement for the degree of Master of clinical Midwifery

Name: Kidest Getu Melese

Signature: \_\_\_\_\_

Place of submission: College of Medicine and Health Sciences, department of midwifery, University of Gondar.

Date of Submission: \_\_\_\_\_

This thesis work has been submitted for examination with my/ our approval as university advisor(s).

### Advisors

Name

Signature

- Sr. Mignote Hailu -----

- Sr. Martha Berta -----